

REMARKS

This Amendment is submitted in response to the Examiner's Action mailed October 27, 2004, with a shortened statutory period of three months set to expire January 27, 2005, extended to February 27, 2005. Claims 1-42 are currently pending. With this amendment, claims 1, 2, 9, 10, 17, 18, 25, 27, 31, 33, 37, and 39 have been amended.

Claims 1, 9, and 17 have been amended to describe a host channel adapter that utilizes an Infiniband (IB) protocol as its networking protocol for data communications. Data is passed from the host channel adapter directly to an Internet Protocol (IP) router that uses IP as its networking protocol for data communications. The router is connected directly to the host channel adapter. The router also is coupled to an external network that utilizes IP as its networking protocol for data communications. Some examples of support for this amendment can be found in the specification on page 4, lines 3-17, and on page 35, lines 15-27.

Claims 25, 31, and 37 have been amended to describe receiving, within an Internet Protocol (IP) router, data from a host channel adapter that utilizes an Infiniband (IB) protocol as its network protocol for data communications. The IP router utilizes IP as its networking protocol for data communications. The IP router is connected directly to the host channel adapter. Some examples of support for this amendment can be found in the specification on page 4, lines 3-17, and on page 35, lines 15-27.

Claims 2, 10, and 18 have been amended to describe invoking an IP over IB device driver in the host. One example of support for this amendment can be found in the specification on page 4, lines 22-25.

Claims 27, 33, and 39 have been amended to describe discarding only the transport header. One example of support for this amendment can be found in the specification on page 42, lines 4-15.

The Examiner objected to the drawings stating that several reference numbers that appear in the drawings are not mentioned in the specification. Applicants have amended the specification to add the missing reference numbers and correct typographic errors. No new matter has been added with these amendments.

The Examiner rejected claims 1, 7, 9, 15, 17, 23, 25, 31, and 37 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication 2002/01844392 published by *Parthasarathy*. This rejection, as it might be applied to the claims as amended, is respectfully traversed.

Applicants' claims 1-24 now describe the host channel adapter utilizing an Infiniband (IB) protocol as its networking protocol for data communications. The host channel adapter passes data directly to an Internet Protocol (IP) router. The IP router uses IP as its networking protocol for data communications. The IP router is connected directly to the host channel adapter and is also coupled to an external network that utilizes IP as its networking protocol for data communications.

Applicants' claims 25-42 now describe the host channel adapter utilizing an Infiniband (IB) protocol as its networking protocol for data communications. An Internet Protocol (IP) router receives data from the host channel adapter. The router utilizes IP as its networking protocol for data communications. The router is connected directly to the host channel adapter.

Parthasarathy describes a system that includes a host channel adapter and target channel adapters coupled to a switch 100'. The switch 100' may be an Infiniband (IB) switched fabric. The IB fabric can include links, routers, and switches as described on page 3, paragraph 0031.

Applicants' claims describe the router as being an Internet Protocol (IP) router that uses IP as its networking protocol for data communications. *Parthasarathy* describes the switch that may include a router as being an IB switch. *Parthasarathy* does not describe the IB switch as including an IP router that uses IP as its networking protocol for data communications.

Applicants' claims describe the host channel adapter as being connected directly to the router. *Parthasarathy* does not describe a host channel adapter as being directly connected to any kind of router. *Parthasarathy* describes the host channel adapter as being connected to the switch. Although the switch is a fabric that may include a router, *Parthasarathy* does not describe the host channel adapter as being connected directly to a router. The host channel adapter of *Parthasarathy* may be connected to a switch that is then connected to a router.

Parthasarathy does not anticipate Applicants' claims because *Parthasarathy* does not teach a router that is connected directly to a host channel adapter. *Parthasarathy* does not teach an IP router that utilizes the IP protocol as its networking protocol for data communications being connected directly to a host channel adapter that uses the IB protocol for its data communications.

The Examiner rejected claims 2-6, 10-14, 18-22, 26, 28-30, 32, 34-36, 38, and 40-42 under 35 U.S.C. § 103(a) as being unpatentable over *Parthasarathy* in view of U.S. Patent Application Publication 2001/0049740 published by *Karpoff*. This rejection, as it might be applied to the claims as amended, is respectfully traversed.

These claims describe the step of passing the data including invoking an IP over IB device driver. The device driver is included in the host that includes the host channel adapter.

The Examiner states that *Parthasarathy* does not teach the feature and uses *Karpoff* to supply the features that are missing from *Parthasarathy*. Specifically, the Examiner states that *Karpoff* teaches implementing IP over an IB architecture.

The Examiner refers to paragraph 0074-0075 and 0087-0089. Paragraphs 0074-0075 describe the messaging scheme as possibly including a combination of protocols used to transmit data from the controller device to the client. These paragraphs do not describe the combination. The combination may be a combination of a link that uses one protocol being coupled to a link that uses a different protocol.

Paragraphs 0087-0089 describe routing traffic between subnets using a router. These paragraphs also describe a router of an IB data center receiving IP-oriented data from the Internet. This process of routing IP-oriented data received from the Internet is performed by the IB data center router.

Karpoff does not teach an IP over IB device driver that is included in a host. *Karpoff* teaches the function of routing being performed by the IB data center router. *Karpoff* does not teach an IP over IB device driver being invoked in a host.

The router of Applicants' claims is an IP router. This IP router uses IP as its networking protocol. The IP router is connected directly to the host channel adapter. *Karpoff* does not teach an IP router that is connected directly to the host channel adapter.

The end nodes of *Karpoff* are connected to switches. The switches are then connected to the IB data center router. The end nodes are not directly connected to the router.

Neither *Parthasarathy* nor *Karpoff*, either singly or in combination, describes, teaches, or suggests an IP router that is connected directly to a host channel adapter.

Neither reference, either singly or in combination, describes, teaches, or suggests an IP over IB device driver that is included in a host. Neither reference, either singly or in combination, describes, teaches, or suggests an IP router that is connected directly to a host channel adapter where passing data from a host process to a host channel adapter includes invoking an IP over IB device driver in the host.

The Examiner rejected claims 8, 16, and 24 under 35 U.S.C. § 103(a) as being unpatentable over *Parthasarathy* in view of Applicants' admitted prior art. This rejection, as it might be applied to the claims as amended, is respectfully traversed.

These claims describe the data being passed to the host channel adapter as one of a Raw Datagram and a Unreliable Datagram. The Examiner relies on Applicants' admitted prior art to supply the features missing from *Parthasarathy*.

Applicants' admitted prior art does mention Raw Datagrams and Unreliable Datagrams. However, the combination of *Parthasarathy* and Applicants' admitted prior art does not describe, teach, or suggest an IP router that is connected directly to the host channel adapter where the IP router utilizes IP as its networking protocol and the host channel adapter uses IB as its networking protocol in combination with the data being passed to the host channel adapter as one of a Raw Datagram and a Unreliable Datagram.

The Examiner rejected claims 27, 33, and 39 under 35 U.S.C. § 103(a) as being unpatentable over *Parthasarathy* in view of Applicants' admitted prior art and further in view of U.S. Patent Application Publication 2002/0159385 published by *Susnow*. This rejection, as it might be applied to the claims as amended, is respectfully traversed.

These claims describe if the data is an Unreliable Datagram and the identified output port is not an InfiniBand output port, only an InfiniBand Transport Header associated with the data is discarded in combination with the host channel adapter utilizing an Infiniband (IB) protocol as its networking protocol for data communications where an Internet Protocol (IP) router receives data from the host channel adapter and the router is connected directly to the host channel adapter.

The Examiner states that *Susnow* teaches discarding packets if the identified port is not an Infiniband output port in paragraphs 0051-0055. These paragraphs describe discarding packets. Applicants' claims describe discarding a header. The entire packet is not discarded according to Applicants' claims, just the particular header, i.e. the transport header.

A packet typically includes one or more headers, the data payload, and error correction information. When the entire packet is discarded, the headers, data, and error correction are all discarded. Applicants do not claim discarding the packet. Applicants' claim language states discarding the header. Therefore, *Susnow* does not supply the feature believed by the Examiner to be missing from *Parthasarathy* and Applicants' admitted prior art because *Susnow* does not teach discarding only the header.

The cited references, either singly or in combination, do not describe, teach, or suggest Applicants' claims. None of the references teaches an IP router that is connected directly to a host channel adapter that uses an IB protocol for its networking protocol. None of the references describes, teaches, or suggests invoking an IP over IB device driver where the device driver is included in the host. None of the references describes, teaches, or suggests an IP router that is connected directly to the host channel adapter where the IP router utilizes IP as its networking protocol and the host channel adapter uses IB as its networking protocol in combination with the data being passed to the host channel adapter as one of a Raw Datagram and a Unreliable Datagram. None of the references describes, teaches, or suggests only an InfiniBand Transport Header associated with the data being discarded in combination with the host channel adapter utilizing an Infiniband (IB) protocol as its networking protocol for data communications where an Internet Protocol (IP) router receives data from the host channel adapter and the router is connected directly to the host channel adapter.

Because the combination of references does not describe, teach, or suggest the features of Applicants' claims, Applicants' claims are believed to be patentable over the prior art. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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